THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A vehicle wheel suspension arrangement comprising a first long stroke vibration damping system and a second long stroke vibration damping system where each long stroke system is tuned to operate at different frequencies; said first long stroke vibration damping system is tuned to attenuate low frequencies associated with a ride mode; said second long stroke vibration damping system is tuned to attenuate higher frequencies associated with a wheel hop and tramp mode and wherein each long stroke vibration damping system is specifically designed to operate over a limited frequency band associated with the specific mode.

2. A vehicle wheel suspension arrangement as claimed in claim 1 wherein said first long stroke vibration damping system includes a blow off valve limiting the attenuation characteristics to a frequency less than 5 hertz.

3. A vehicle wheel suspension arrangement as claimed in claim 1 or 2 wherein said first and second long stroke vibration damping systems are placed in parallel.

4. A vehicle wheel suspension arrangement as claimed in claim 1, 2 or 3 wherein said second long stroke vibration damping system is designed to attenuate frequencies in the range of 10 to 25 hertz.

5. A vehicle wheel suspension arrangement as claimed in claim 1, 2 or 3 wherein each long stroke vibration damping system is designed to be effective in a limited frequency band and said frequency bands are separate and distinct.

6. A vehicle wheel suspension support arrangement as claimed in claim 1, 2, 3, 4 or 5 wherein said long stroke vibration damping systems are disposed in parallel.

7. A vehicle wheel suspension support arrangement as claimed in claim 1, 2, 3, 4, 5 or 6 wherein said second long stroke vibration damping system is a long stroke hydromount type arrangement.

8. A vehicle suspension arrangement as claimed in claim 7 wherein said hydromount arrangement includes an elongated piston cylinder closed at one end by a deformable diaphragm, a piston movable within said cylinder and defining within said cylinder a variable volume working chamber between said piston and said diaphragm, an inertia track connecting said working chamber to a collection chamber, and a working hydraulic fluid which is displaced through said inertia track with movement of said piston.

9. A vehicle suspension arrangement as claimed in claim 1, 2, 3, 4, 5, 6, or 7 wherein said second long stroke vibration damping system accommodates movement of a displaceable member thereof of at least 100mm.

10. A vehicle wheel suspension arrangement as claimed in claim 1 wherein said first and second vibration damping systems are combined in a single structure with said vibration damping systems being generally concentric.

11. A vehicle wheel suspension arrangement as claimed in claim 1 wherein said first and second vibration damping systems are combined and disposed in a parallel configuration.

12. A vehicle wheel suspension arrangement as claimed in claim 1 wherein said first and second vibration

damping systems are integrated into a combined vibration damping system.

13. A vehicle wheel suspension arrangement as claimed in claim 1 wherein said limited frequency band associated with ride mode is separated from said frequency band associated with wheel hop and tramp mode by an intermediate frequency band.

14. A vehicle wheel suspension arrangement as claimed in claim 13 wherein said first and second vibration damping systems have limited influence on vibrations of a frequency within said intermediate frequency band and said suspension arrangement has improved performance with respect to road noise.

15. A vehicle wheel suspension arrangement as claimed in claim 1, wherein said first and second systems cooperate to reduce high frequency damping associated with road noise.

16. In a vehicle wheel suspension arrangement, a vibration damping system comprising a first vibration damping transmission path for attenuating vibrations of a frequency associated with a ride mode and a second vibration damping transmission path for attenuating vibrations of a frequency associated with a wheel hop and tramp mode; and wherein each vibration damping transmission path is designed to be effective in attenuating frequencies and accommodating displacements of the associated mode.

17. In a vehicle suspension arrangement as claimed in claim 16 wherein said vibration transmission path functions in a parallel manner.

18. In a vehicle suspension arrangement as claimed in claim 16 wherein said vibration transmission paths are integrated.

19. A hydraulic tuned damper comprising an elongate piston cylinder closed at one end by a deformable diaphragm, a piston movable within said cylinder and defining between said piston and said deformable diaphragm, a variable volume working chamber, an inertia track connecting said working chamber with a collection chamber, and a working hydraulic fluid which is displaced through said inertia track between said working chamber and said collection chamber with movement of said piston.

20. A hydraulic tuned damper as claimed in claim 19 wherein said damper is used in a steering linkage and is tuned to reduced steering nibble.